U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OF ICE REC'D REC' ATRANSMITTAL LETTER TO THE UNITED STATES

DESIGNATED/ELECTED OFFICE (DO/EO/US)

U.S. APPLICATION NO. (If known, see 37 CFR 1.5

C	ONCERNING A FILING (	JNDER 35 U.S.C. 371	10/530049						
	NATIONAL APPLICATION NO.	INTERNATIONAL FILING DATE October 4, 2002	PRIORITY DATE CLAIMED						
	OF INVENTION NAMPLIFICATION SYSTEM UTIL	IZING MODULATED SECOND-ORDER RA	AMAN PUMPING						
	CANT(S) FOR DO/EO/US HAINBERGER								
Applica	ant herewith submits to the United State	es Designated/Elected Office (DO/EO/US) the fo	ollowing items and other information:						
1. 🛛	This is a FIRST submission of ite	ems concerning a filing under 35 U.S.C. 3	71.						
2. 🗆	This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.								
3. 🛛	This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (21) indicated below.								
4. 🗆	The US has been elected (Article 31).								
5. 🛛	<ul><li>a. ⊠ is attached hereto (requ</li><li>b. □ has been communicated</li></ul>	cation as filed (35 U.S.C. 371(c)(2)) ired only if not communicated by the Inte d by the International Bureau. application was filed in the United States F							
6. 🗆	a. 🔲 is attached hereto.	of the International Application as filed (3 mitted under 35 U.S.C. 154(d)(4).	5 U.S.C. 371(c)(2)).						
7. 🗖	Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))  a.  are attached hereto (required only if not communicated by the International Bureau).  b.  have been communicated by the International Bureau.  c.  have not been made; however, the time limit for making such amendments has NOT expired.  d.  have not been made and will not be made.								
9. 🗆	An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371 (c)(3) An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).  An English language translation of the annexes of the International Preliminary Examination Report under Polyticle 36 (35 U.S.C. 371(c)(5)).								
Items	11 to 20 below concern docume	ent(s) or information included:							
11. 🛛	An Information Disclosure Staten	nent under 37 CFR 1.97 and 1.98.							
12 🗆	An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is								
13. 🔲	included. A preliminary amendment.								
14. 🔲	An Application Data Sheet under 37 CFR 1.76.								
15. 🔲	A substitute specification.								
16. 🔲	A power of attorney and/or change	ge of address letter.							
17. 🗆	A computer-readable form of the 1.825.	sequence listing in accordance with PCT	Rule 13ter.2 and 37 CFR 1.821 -						
18. 🔲	A second copy of the published in	nternational application under 35 U.S.C.	154(d)(4).						
19. 🔲	A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).								

20. 

Other items or information: Copy of the Notification of the International Application Number and of International Filing Date; Copy of the Notification of Receipt of Search Copy; Copy of the Notification of Transmittal of the International Search Report.

Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)).  TOTAL NATIONAL FEE = \$1600.00  Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property + \$  TOTAL FEES ENCLOSED = \$1600.00  Amount to be refunded: \$  Amount to be charged: \$  a. X' A check in the amount of \$1600.00 to cover the above fees is enclosed. b. 1 Please charge my Deposit Account No in the amount of \$ to cover the above fees. A duplicate copy of this sheet is enclosed. c. \( The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 19-3935. A duplicate copy of this sheet is enclosed. d. \( \text{Fees are to be charged to a credit card. WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.  NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.  SEND ALL CORRESPONDENCE TO:  Staas & Halsey LLP  1201 New York Avenue, N.W., Suite 700  NAME  30,358	U.S. APPLICATION NO. Unassigned	(if mown, see 37 CFR 1.5)	INTERNATIONAL APPLICATION NO PCT/JP02/10375		1826 1063	OCKET NUMBER				
Samuel	21. ⊠ The fo	ollowing fees are s	submitted:	JUT/ Hec	APPLICANT USE					
TOTAL OF ABOVE CALCULATIONS = \$1000.00 \$10000.00 \$10000.00 \$10000.00 \$10000.00 \$10000.00 \$10000.00 \$10000.00 \$10000.00 \$10000.00 \$10000.00	⊠ a	) Basic National	Fee	\$300.00	\$300.00					
TOTAL OF ABOVE CALCULATIONS = \$1000.00  Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing or computer program listing filed in an electronic medium). The fee is \$250 for each addition 50 sheets of paper or fraction thereof.  Total Sheets		) Examination F	\$200.00							
Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing or computer program listing filed in an electronic medium). The fee is \$250 for each addition 50 sheets of paper or fraction thereof.    Total Sheets	⊠ c	) Search Fee	\$500.00							
(excluding sequence listing or computer program listing filed in an electronic medium). The fee is \$250 for each addition 50 sheets of paper or fraction    Total Sheets	т	OTAL OF ABOV	\$1000.00							
Total Sheets   Extra Sheets   50 or fraction thereof   X 250.00	(excluding s medium). T	sequence listing or								
Surcharge of \$130.00 for furnishing the oath or declaration later than 30 months from the earliest claimed priority date (37 CFR 1.492(e)).  CLAIMS NUMBER FILED NUMBER EXTRA RATE \$  Total claims 14-20 =	Total Sheets	Extra Sheets		Rate						
from the earliest claimed priority date (37 CFR 1.492(e)).  CLAIMS NUMBER FILED NUMBER EXTRA RATE  Total claims 14-20 =	* - 100 =	*/50=		X 250.00						
Total claims  14-20 =			\$							
Independent claims  14- 20 =	CLAIMS	NUMBER FILE	D NUMBER EXTRA	RATE	\$	1				
MULTIPLE DEPENDENT CLAIM(S) (if applicable) + \$360.00 \$  TOTAL OF ABOVE CALCULATIONS = \$1600.00  Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.  SUBTOTAL = \$1600.00  Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)).  TOTAL NATIONAL FEE = \$1600.00  Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) \$40.00 per property + \$1600.00  Amount to be charged: \$1600.00  Amount to be refunded: \$  Amount to be charged: \$  a. A check in the amount of \$1600.00 to cover the above fees is enclosed. b. 1 Plèase charge my Deposit Account No. in the amount of \$	Total claims	14- 20	) =	× \$50.00	\$					
MULTIPLE DEPENDENT CLAIM(S) (if applicable) + \$360.00 \$  TOTAL OF ABOVE CALCULATIONS = \$1600.00  Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.  SUBTOTAL = \$1600.00  Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)).  TOTAL NATIONAL FEE = \$1600.00  Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property + \$1600.00  Amount to be refunded: \$1600.00  Amount to be charged: \$1600.00  Aduplicate copy of this sheet is enclosed.  C. \(  The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 19-3935. A duplicate copy of this sheet is enclosed.  C. \( \text{ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 19-3935. A duplicate copy of this sheet is enclosed.  C. \( \text{ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 19-3935. A duplicate copy of this sheet is enclosed.  C. \( \text{ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 19-3935. A duplicate copy of this sheet is enclosed.  C. \( \text{ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 19-3935. A duplicate copy of this sheet is enclosed.  C. \( \text{ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Dep	Independent cla	ims 6-3=	3	X \$200.00	\$600.00					
Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.  SUBTOTAL = \$1600.00  Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)).  TOTAL NATIONAL FEE = \$1600.00  Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property + \$1600.00  Amount to be refunded:  Amount to be refunded:  Amount to be charged:  A duplicate copy of this sheet is enclosed.  A duplicate copy of this sheet is enclosed.  A duplicate copy of this sheet is enclosed.  Fee sare to be charged to a credit card. WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.  NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.  SEND ALL CORRESPONDENCE TO:  Staas & Halsey LLP  J. Randall Beckers  NAME  J. Randall Beckers	<del></del>		\$							
Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.  SUBTOTAL = \$1600.00  Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)).  **TOTAL NATIONAL FEE = \$1600.00  Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property + \$  **TOTAL FEES ENCLOSED = \$1600.00  **Amount to be refunded: \$  **A check in the amount of \$1600.00 to cover the above fees is enclosed.  **D. Please charge my Deposit Account No in the amount of \$ to cover the above fees.			\$1600.00							
Processing fee of \$130.00 for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(f)).  **TOTAL NATIONAL FEE = \$1600.00  **Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property + \$  **TOTAL FEES ENCLOSED = \$1600.00  **Amount to be refunded: \$  **Amount to be charged: \$  **A check in the amount of \$1600.00 to cover the above fees is enclosed.  **Description of this sheet is enclosed.  **A duplicate copy of this sheet is enclosed.  **Out Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 19-3935. A duplicate copy of this sheet is enclosed.  **Description of the description of this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.  **NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.  **SIGNATURE J. Randall Beckers NAME J. Rand	Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are									
the earliest claimed priority date (37 CFR 1.492(f)).  TOTAL NATIONAL FEE =  Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +  TOTAL FEES ENCLOSED =  Amount to be refunded:  Amount to be charged:  Amount to be refunded:  Amount to be refunded:  Amount to be charged:  Amount to be refunded:  Amount to be refunded:  Amount to be charged:  Amount to be charged:  Amount to be charged:  Amount to be refunded:  Amount to be refunded:  Amount to be charged:  Amount to be charged:  Amount to be charged:  Amount to be refunded:  Amount to be charged:  Amount to be refunded:  Amount to be charged:  Amount to be refunded:  Amount to be charged:  Amount to be refunded:  Amount to be refunded:  Amount to be charged:  Amount to be refunded:  Amount to be refunded:  Amount to be charged:  Amount to be refunded:  Amount to be refunded:  Amount to be charged:  Amount to be charged:  Amount to be refunded:  Amount to be charged:  Amount to be refunded:  Amount to be refunded:  Amount to be charged:  Amount to be charged:  Amount to be charged:  Amount to be refunded:  Amount to be charged:  Amount to be charged:  Amount	SUBTOTAL =		\$1600.00							
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property + \$1600.00										
accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property + \$1600.00 \$    Amount to be refunded:   \$1600.00 \$   Amount to be charged:			\$1600.00							
Amount to be refunded:  Amount to be charged:  \$  Amount to be charged:  \$  Amount to be charged:  \$  Amount to be refunded:  \$  Amount to be charged:  \$  \$  Amount to be refunded:  \$  \$  Amount to be charged:  \$  \$  Adualized:  Amount to be charged:  \$  \$  Amount to be charged:  \$  \$  Adualized:  Amount to be charged:  \$  \$  Adualized:  Amount to be cover the above fees is enclosed.  to cover the above fees.  Adualized:  Amount to be included.  \$  Adualized:  Amount to be included.  \$  Amount to be included.  \$  Adualized:  Amount to be included.  \$  Amount to be charged:  \$  Adualized:  Amount to be included.  \$  Amount to be included.  \$  Adualized:  Amount to be included.  \$  Amount to be included.  \$  Adualized:  Amount to be included.  \$  Adualized:  Amount to be included.  \$  Amount to be included.  \$  Amount to be included.  \$  Adualized:  Amount to be included.  \$  Amount to be refunded.  \$  Adualized:  Amount to cover the above fees.  Adualized:  Am	accompanied by	an appropriate cove								
Amount to be charged:  a. A check in the amount of \$1600.00 to cover the above fees is enclosed. b. 1 Pléase charge my Deposit Account No in the amount of \$ to cover the above fees. A duplicate copy of this sheet is enclosed. c. \( \subseteq  The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 19-3935. A duplicate copy of this sheet is enclosed. d. \( \subseteq \text{ Fees are to be charged to a credit card. WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.  NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.  SEND ALL CORRESPONDENCE TO:  Staas & Halsey LLP  1201 New York Avenue, N.W., Suite 700  NAME  Washington, DC 20005	TOTAL FEES	ENCLOSED =			\$1600.00					
a. X A check in the amount of \$1600.00 to cover the above fees is enclosed. b. 1 Please charge my Deposit Account No		Amount to be refunded: \$								
b. 1 Please charge my Deposit Account Noin the amount of \$to cover the above fees.  A duplicate copy of this sheet is enclosed.  C. ☑ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 19-3935. A duplicate copy of this sheet is enclosed.  d. ☐ Fees are to be charged to a credit card. WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.  NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.  SEND ALL CORRESPONDENCE TO:  Staas & Halsey LLP  1201 New York Avenue, N.W., Suite 700  NAME  Washington, DC 20005				<del>_</del>	3-36446\$E	\$				
c. \( \text{The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. \( \frac{19-3935}{19-3935} \). A duplicate copy of this sheet is enclosed.  d. \( \text{Tees are to be charged to a credit card.} \) \( WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.  NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.  SEND ALL CORRESPONDENCE TO:  Staas & Halsey LLP  1201 New York Avenue, N.W., Suite 700  Washington, DC 20005  NAME  30,358	b. 1 Please charge my Deposit Account Noin the amount of \$to cover the above fees.									
d. ☐ Fees are to be charged to a credit card. WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.  NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.  SEND ALL CORRESPONDENCE TO:  Staas & Halsey LLP  1201 New York Avenue, N.W., Suite 700  Washington, DC 20005	c.   The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any									
should not be included on this form. Provide credit card information and authorization on PTO-2038.  NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.  SEND ALL CORRESPONDENCE TO:  Staas & Halsey LLP  1201 New York Avenue, N.W., Suite 700  Washington, DC 20005  NAME  30,358		•								
NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.  SEND ALL CORRESPONDENCE TO:  Staas & Halsey LLP  1201 New York Avenue, N.W., Suite 700  Washington, DC 20005  NAME  30,358										
SEND ALL CORRESPONDENCE TO:  Staas & Halsey LLP 1201 New York Avenue, N.W., Suite 700  Washington, DC 20005  Washington and granted to restore the application to pending status.  July 1  Jignature  J. Randall Beckers  NAME  30,358	Siloulu ile	n de includea on a	ns form. I forme creat care mix	omation and admonate	011 011 1 1 0 2000.					
Staas & Halsey LLP  Staas & Halsey LLP  1201 New York Avenue, N.W., Suite 700  Washington, DC 20005    Signature   J. Randall Beckers   NAME   Signature	NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137 (a) or (b)) must be filed and granted to restore the application to pending status.									
Staas & Halsey LLP  Staas & Halsey LLP  1201 New York Avenue, N.W., Suite 700  Washington, DC 20005    Signature   J. Randall Beckers   NAME   Signature				$\wedge$	. /					
1201 New York Avenue, N.W., Suite 700  Washington, DC 20005  NAME  30,358	SEND ALL CORRESPONDENCE TO:									
1201 New York Avenue, N.W., Suite 700  Washington, DC 20005  NAME  30,358	Stage & Halsey LLP									
Washington, DC 2000530,358_			ite 700			<del></del>				
REGISTRATION NUMBER					,					